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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,660	04/02/2004	Jonathan Qiang Li	10031315-1	3412

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AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
Intellectual Property Administration
P.O. Box 7599
Loveland, CO 80537-0599

EXAMINER

THOMAS, MIA M

ART UNIT	PAPER NUMBER
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2609

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/817,660

Applicant(s)

LI, JONATHAN QIANG

Examiner

Mia M. Thomas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

Manual of Patent Examining Procedure (MPEP)

Reference: Patent Rule 1.98-Content of Information Disclosure Statement

§ 1.98 Content of information disclosure statement.

- (a) Any information disclosure statement filed under § 1.97 shall include the items listed in paragraphs (a)(1), (a)(2) and (a)(3) of this section.
 - (1) A list of all patents, publications, applications, or other information submitted for consideration by the Office. U.S. patents and U.S. patent application publications must be listed in a section separately from citations of other documents. Each page of the list must include:
 - (i) The application number of the application in which the information disclosure statement is being submitted;
 - (ii) A column that provides a space, next to each document to be considered, for the examiner's initials; and
 - (iii) A heading that clearly indicates that the list is an information disclosure statement.

1. The information disclosure statement filed November 16, 2006 fails to comply with 37 CFR 1.98 because it lacks data, or information concerning Non-Patent Literature Documents on the actual form submitted herein is blank. Applicant has filed a blank Information Disclosure Statement (IDS) with nothing to initial. It has been placed in the application file, but the information referred to therein was not complete nor filled out by the applicant. The contents of the Information Disclosure Statement,

although filed properly was not referenced in the actual IDS form and Examiner has not initialed any documents of record.

Claim Objections - 37 CFR 1.75(a)

1. The following is a quotation of 37 CFR 1.75(a):

The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention or discovery.

2. Claim 13 is objected to under 37 CFR 1.75(a) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery.

Regarding claim 13, the term “said displaying” at line 1, lacks an antecedent basis. However, it appears from the context of the claim when read in light of the specification that “said displaying” is referring to the generation of the graphical user interface first introduced at line 30 at claim 11. It is assumed that applicant was referring to the graphical user interface because that is where the visual indications of the confidence values would appear. For purposes of examination, **Claim 13**, will be interpreted as: “...wherein said display unit from the graphical user interface uses a predetermined color to identify training data structures associated with a confidence value below a threshold value.” Appropriate corrections and/or modifications are required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-12, 22 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Loui et al. (US 7,039,239 B2).

Regarding Claims 1-10, a computer readable medium including executable instructions for processing training data for a statistical classification application, said computer readable medium comprising: code for retrieving a plurality of training data structures that each comprise data members corresponding to feature elements and a data member identifying one of a plurality of classes; code for processing each of said plurality of training data structures using probabilistic models that are a function of said feature elements to calculate a respective probability indicative of the respective training data structure belonging to its identified class; and code for generating a scatter plot, using said plurality of training data structures, that visually indicates probabilities of said training data structures belonging to identified classes; code for annotating points in said scatter plot to indicate probabilities of said plurality of training data structures belonging to identified classes; wherein said code for generating a scatter plot displays points in said scatter plot using a predetermined color to indicate training data structures having probabilities below a threshold value; code for identifying regions of

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said scatter plot that correspond to said plurality of classes; code for receiving first input from a user to select a point corresponding to a respective training data structure; code for displaying values of feature elements of said respective training data structure corresponding to said selected point; code for displaying an image file associated with an object from which feature elements were derived in response to said code for receiving first input; code for receiving second input from said user to reclassify said respective training data structure corresponding to said selected point; code for revising said probabilistic models in response to said code for receiving said second input, wherein said code for processing is operable to recalculate probabilities of said plurality of training data structures belonging to identified classes using said revised probabilistic models; code for receiving second input from said user to delete said respective training data structure corresponding to said selected point (“In the following description, a preferred embodiment of the present invention would ordinarily be implemented as a software program,...Given the method as described according to the invention in the following materials, software not specifically shown, suggested or described herein that is useful for implementation of the invention is conventional and within the ordinary skill on such arts.” at column 3, line 17).

Regarding Claim 11, Loui teaches a method for processing training data for a statistical classification application (“...the invention resides in a method for classification of image regions by probabilistic merging of a class probability map and a cluster probability map.” at column 2, line 14, e.g. Figure 1, numeral 24), the method comprising: accessing a plurality of training data structures wherein each training data structure includes a plurality of feature variables (“As the first step, several features are

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extracted in a feature extraction stage 12 from an input color image 10.” at column 3, line 41; “The nature of these features may vary...such as color, texture, shapes, wavelet coefficients, etc...” at column 3, line 45) and a variable identifying one of a plurality of classes (“Most common techniques are either based on maximization of mutual information or some sort of statistical test of dependence between the classes and the features.” at column 3, line 58); calculating a respective confidence value for each of said plurality of training data structures that is indicative of a probability of the respective training data structure belonging to its identified class (“...selects how many clusters there are in the image...and employs a clustering algorithm 20 to cluster the similar pixels in distinct groups...” at column 4, line 2); and generating a graphical user interface for a scatter plot that visually indicates confidence values for said plurality of training data structures (“A display 114 is electronically connected to the microprocessor-based unit 112 for displaying user-related information associated with the software, e.g., by means of a graphical user interface.” at column 13, line 64).

Regarding Claim 12, Loui teaches annotating at least a subset of points in said scatter plot with said confidence values (“A keyboard 116 is also connected to the microprocessor based unit 112 for permitting a user to input information to the software.” at column 13, line 67).

Regarding Claim 22, Loui teaches a system for processing training data for a statistical classification application (“Figure 12 is a perspective diagram of a computer system for implementing the present invention.” at column 3, line 5, (e.g. Figure 12, numeral 110)), the system comprising: means for processing a plurality of training data structures to generate a plurality of confidence values (“The computer system 110

includes a microprocessor-based unit 112 for receiving and processing software programs and for performing other processing functions.” at column 13, line 61), wherein said each of said plurality of training data structures defines feature values and identifies one of a plurality of classes (“...performing supervised learning based on the extracted features to obtain a class probability map of the image pixels...” at column 2, line 21), wherein said confidence values indicate probabilities of objects having said feature values belonging to said identified classes (“The preferred technique for probabilistic classification of image regions is shown in Figure 1. The main aim of this technique is to find a class probability map over the input image representing the probability of each pixel to have come from the given class.” at column 3, line 37); and means for displaying a scatter plot using said plurality of training data structures that provides visual indication of probabilities of points belonging to identified classes (“A display 114 is electronically connected to the microprocessor-based unit 112 for displaying user-related information associated with the software, e.g., by means of a graphical user interface.” at column 13, line 64).

Regarding Claim 23, Loui teaches means for annotating points in said scatter plot to indicate probabilities of said plurality of training data structure belonging to identified classes (“A keyboard 116 is also connected to the microprocessor based unit 112 for permitting a user to input information to the software.” at column 13, line 67).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 13-21, 24--26 rejected under 35 U.S.C. 103(a) as being unpatentable over Loui et al in combination with Donoho (IEEE computer Graphics and Applications 1988-July, pages 51-58).

Loui et al teaches the claimed elements of claims 1-12, 22 and 23 as recorded in the U.S.C. 102 (b) rejections above. Loui does not teach the elements of applicant's claims 13-21 and 24-26. Donoho teaches:

Regarding Claim 13, Donoho teaches wherein said display unit from the graphical user interface uses a predetermined color to identify training data structures ("Display options cover a large range...like: Background color-Display data as white points on a black background or as black ones on a white background." at page 55, paragraph 6, left column under Display Options); associated with a confidence value below a threshold value ("Other features...include the ability to inspect a spread-sheet like view of the entire data set, which the user can scroll through and edit", at page 56, paragraph 4, left column).

Regarding Claim 14, Donoho teaches wherein said threshold value is determined by receiving input from a user ("As we have seen, MacSpin allows the user to transform data by any of the operations listed in Figure 6. The user may also create linear combinations of several variables." at page 56, paragraph 7, right column under Subset Operations).

Regarding Claim 15, Donoho teaches wherein said graphical user interface identifies regions of said scatter plot associated with each of said plurality of classes (For example, Figure 5. Animation showing changes in the performance of American cars over time: the years 1971, 1978 and 1983 are shown at page 52. “Further rotation shows that the data consist of three clusters. We could also highlight “American”, “European,” and “Japanese” subsets in turn, and find out where they are on the display. ” at page 53, paragraph 3, right column under Highlighting Subsets).

Regarding Claim 16, Donoho teaches receiving user input to select a point of said scatter plot (“The program offers a broad range of data manipulation and calculation features. These allow the user to interactively transform, edit, and categorize data as patterns in the display indicate.” at page 51, paragraph 2, at right column in summary section; For example, “The view in the plot window shows all the cars in an x-y plot...The points represent individual cars. By moving the cursor to a point and clicking we find its identity.” at page 52, paragraph 2, right column under x-y Plots).

Regarding Claim 17, Donoho teaches displaying values of feature element variables of a training data structure corresponding to said selected point (For example, Figure 2. Info pop-up for Datsun ZX at page 52. “The “variables” window shows the variables measured for each car.” at page 52, paragraph 1, left column).

Regarding Claim 18, Donoho teaches displaying an image file associated with an object from which values (For example, Figure 7. American cars, with special markers given to model years 1971 to 1983, at page 53 and Figures 2 and 6) of a plurality of feature variables corresponding to said selected point, were obtained (“The x-y plot

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shows the general trend of two –variables-what combinations of speed and economy are available.” at page 53, paragraph 1, left column under x-y-z Plots).

Regarding Claim 19, Donoho teaches deleting said training data structure corresponding to said selected point in response to further user input (“By choosing “Exclude” from the events menu, we [temporarily] remove them from the display. The rotation has helped us identify and remove outliers.” at page 53, paragraph 2, left column under x-y-z Plots).

Regarding Claim 20, Donoho teaches reclassifying said training data structure corresponding to said selected point in response to further user input (“Animation permits us to study the effect of a fourth variable. Suppose we are interested in how the American auto industry has changed over time. We can select the American cars, and then select “Focus” from the events menu.” at page 53, paragraph 4, left column, under Highlighting Subsets).

Regarding Claim 21, Donoho teaches refining probabilistic models after reclassification of at least one of said plurality of training data structures by a user (“The researcher can also transform existing variables to create new ones.” at page 53, paragraph 5); and repeating said calculating and displaying in response to said refining (“Features like this make MacSpin useful not just for displaying data but for manipulating it to get the right display.” at page 53, paragraph 5, right column under Transformations).

Regarding Claim 24, Donoho teaches means for receiving first user input to select a point in said scatter plot (“The points represent individual cars. By moving the cursor to

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a point and clicking, we find its identity.” at page 52, paragraph 2, right column under X-Y Plots).

Regarding Claim 25, Donoho teaches means for receiving second user input to reclassify a training data structure corresponding to said selected scatter point (“By rotating the plot, we get an extra dimension into the display...We stop the rotation and identify it...By pointing at their names on the list, we highlight them in the plot window. They are outliers. By choosing “Exclude” from the events menu, we [temporarily] remove them from the display.” at page 53, paragraph 1 and 2, right column under X-Y-Z Plots).

Regarding Claim 26, Donoho teaches means for revising probabilistic models associated with said plurality of classes (“The researcher can also transform existing variables to create new ones.” at page 53, paragraph 5, right column under Transformations), wherein said means for processing reprocesses said plurality of training data structures in response to said means for revising and said means for displaying redisplay said scatter plot using revised probabilities from said means for processing (“Features like this make MacSpin useful not just for displaying data but for manipulating it to get the right display. For example, as shown in Figures 6 and 7, “Looking at the plots with this new variable shows that the American cars got more efficient and not just smaller over this period. Variable transformations are all included in a special “Transformations” window (see Figure 6), and executed by pointing and clicking with the mouse.” At page 53, paragraph 5, right column under Transformations).

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It would have been obvious at the time that the invention was made to modify the software and executable instructions, residing on a computer readable medium, of Claims 1-10 as taught by Loui to include the detailed instructions and execution of claims 13-21 and claims 24-26 as taught by Donoho. Donoho in the same field of statistical classification teaches the Dynamic Graphics on a Computer through a computer program - MacSpin. Donoho further implements and teaches how the executable instructions residing on the computer readable medium of claims 1-10 as taught by Loui can be carried out. "MacSpin uses rotation to display 3D scatter plots, and offers such dynamic graphics primitives as animation, identification, and highlighting as well." at page 51, left column under the summary section.

Additionally, MacSpin "... places a great deal of emphasis on completeness of display options, on quality of the user interface, and on ease of use." At page 51, right column under the summary section.

It would have also been obvious to add the detailed instructions of claims 13-21 and 24-26 as taught by Donoho to the method and system of processing training data as taught by Loui in Claims 11 and 22. The detailed instructions of claims 13-21 and 24-26 as taught by Donoho are an implementation of instructions for a user to input various data and to analyze multiple forms of that data. MacSpin: Dynamic Graphics on a Desktop Computer as taught in claims 13-21 and 24-26 by Donoho teaches the actual program which creates a "high level of interaction between the analyst and data." at page 51, paragraph 1, left column in the summary section. Accordingly with the system for processing training data for a statistical classification application as taught by Loui in

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claim 22, it would have been obvious to add the detailed instructions of claims and 24-26 as taught by Donoho as a means to carry out the means for processing a plurality of training data structures to generate a plurality of confidence values, wherein said each of said plurality of training data structures defines feature values and identifies one of a plurality of classes and means for displaying a scatter plot using said plurality of training data structures that provides visual indication of probabilities of points belonging to identified classes. "The best way to explain what dynamic graphics can do has been to use it on real data and illustrate the features..." at page 51, paragraph 1, introduction paragraph.

It would have also been obvious to add annotation or teach a means for annotating a subset of points in a scatter plot with confidence values as taught by Loui to the graphical user interface as taught by Donoho. Loui teaches that, "A keyboard 116 is also connected to the microprocessor based unit 112 for permitting a user to input information to the software." at column 13, line 67. Donoho teaches that MacSpin also provides many display options and a number of statistical summaries. All these features are available to the user at the click of a mouse button." at page 51, paragraph 2 under the summary paragraph, which creates a more efficient means of execution of processing the classification data rapidly and with ease for the analyst and further eases the processing of the data of interest.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mia M. Thomas whose telephone number is 571-270-1583. The examiner can normally be reached on Monday-Friday 7:30am-5pm.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on 571-272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mia M Thomas
Examiner
Art Unit 2609

MMT



BRIAN WERNER
SUPERVISORY PATENT EXAMINER